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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Application Number: 09/134,419
Filing Date: August 14, 1998
Appellant(s): ROSS ET AL.

James T. Carmichael
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4-2-02.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The status of the claims is substantially correct. The changes are as follows: The rejection of claims 1-6 under 35 U.S.C. 112(2) has been withdrawn.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows: The 35 U.S.C. 112 rejection of record has been withdrawn; therefore only the Double patenting and 35 U.S.C. 103 rejections remain.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-4,8-11 and 21-37 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,786,378	HAMILTON	7-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 6, 8-11 and 21-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 7-10, 18-21 and 28-31 of U.S. Patent No. 5,786,378. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to a method of effecting or treating neuronal activity in an animal with the same or analogous compounds.

The claims of the instant application differ only through the claim language of treating vision disorders; however, the basis of the treatment is “nerve related”. As

acknowledged by applicant in the interview of 11/28/00 and the amendment filed 11/29/00 to overcome the 35 U.S.C. 112(1) rejection of record, the basis of the invention is treating the neurological basis or etiology of the vision disorder or memory impairment. Given that the claims of '378 are drawn to treating or effecting neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder using the same compounds set forth in the instant application, one of ordinary skill in the art would certainly have a reasonable expectation of success in the use of these compounds to treat conditions which have a neurological basis as well as be provided with the motivation to use these compounds for disorders which have a neurological etiology.

35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6, 8-11 and 21-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al., U.S. Patent No. 5,786,378.

Claims 1-4, 6, 8-11 and 21-37 are drawn to a method of treating a nerve related vision disorder or treating memory impairment in a mammal in need thereof via administration of heterocyclic esters.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Hamilton et al. teaches a method of treating or effecting neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder with the analogous compounds set forth in the instant claims. Hamilton et al. teaches that these compounds do not exert any significant immunosuppressive activity in addition to their neurotrophic activity (col. 2 - col.12). Hamilton et al. also teaches the use of these compounds for the treatment of memory impairment such as Alzheimer's disease (col. 12, lines 1-39). Although Hamilton et al. does not specifically mention vision disorders, the treatment target in Hamilton et al. is neuronal activity and the basis of the treatment of the instant claims is neurological or "nerve related" which adequately bridges the nexus between the differences in the prior art and the invention as claimed.

It would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made to use the heterocyclic esters to treat nerve related vision disorders or memory impairment.

A person of ordinary skill in the art would have been motivated to use the analogous compounds for the treatment of nerve related vision disorders or memory

impairments given the general use of these compounds in the prior art for stimulation of damaged neurons, promotion of neuronal regulation and treatment of neurological disorders; as well as the non-immunosuppressive activity displayed by these compounds.

(11) Response to Argument

Double Patenting Rejection of Claims 1-4, 6, 8-11, and 21-37

Appellant's arguments in the brief filed 4-2-02, have been fully considered but they are not persuasive. The rejection of claims 1-4,6,8-11, and 21-37 under double patenting over claims 28-31 of U.S. Patent No. 5,786,378 is maintained for the reasons set forth below.

Appellant argues that the treatment of memory and vision disorders is distinct from affecting a neuronal activity. Appellant further asserts that there is no prima facie case established because the recited compound, "may or may not treat a neurological disorder (p. 6 of the brief)" and the metes and bounds of the claims have not been considered.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 28-31 of '378 are generic to all that is recited in instant claims 1-4, 6, 8-11, and 21-37 . Specifically, instant claims 1-4,6,8-11, and 21-37 fall entirely within the scope of claims 28-31 of '378. Appellant claims that there is no technical or factual basis, however as cited supra, the claims of the instant application differ only through the claim language of treating vision disorders; however, the basis of

the treatment is "nerve related". As acknowledged by applicant in the interview of 11/28/00 and the amendment filed 11/29/00 to overcome the 35 U.S.C. 112(1) rejection of record, the basis of the instantly claimed invention is treating the neurological basis or etiology of the vision disorder or memory impairment (emphasis added). Given that the claims of '378 are drawn to treating or affecting neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder using FKBP-type immunophilin ligands as set forth in the instant application, one of ordinary skill in the art would certainly have a reasonable expectation of success in the use of these compounds to treat conditions which have a neurological basis as well as be provided with the motivation to use these compounds for disorders which have a neurological etiology or constitute neuronal degeneration. Appellant has not provided a specific response to the reasoning cited supra, only the statement that there is no technical or factual basis; moreover, appellant has provided no evidence to demonstrate that the generic teachings of '378 with regard to the treatment of neurological disorders or neurodegeneration with the same immunophilin ligand does not provide a nexus for treating neurological disorders which affect vision and memory. Use of the terms vision and memory, do not mask the fact that the scope of the claim is rooted in the treatment of the neuronal activity or neurodegeneration, the vision and memory disorders are treated when the neuronal activity or neurodegeneration is treated first, not vice versa.

Given that vision and memory are two distinct systems, one of skill in the art would not assume that the treatment of disorders which affect these systems with the same

compounds could be accomplished unless there was a biochemical pathway common to both which is being modulated, the nexus for the treatment of these diverse systems in the instant claims is clearly neurodegeneration which can effect either one of these systems. Appellant's arguments support this rationale, as cited by appellant on p.7 of the instant brief, "The record reflects that compounds such as Imipramine used for treating symptoms associated with Alzheimer's disease are not effective for treating memory impairment, and there is also no expectation that such compounds would be effective in treating vision disorders".

Appellant had previously amended the claims to include the neurological basis because it was clear that there was no support in the specification for the treatment of vision and memory disorders broadly with the compounds of the invention, i.e. glaucoma, cataracts, myopia, amnesia, which are all conditions which effect vision or memory, yet the compounds of the invention had no support for these conditions or the multitude of conditions which are encompassed by the terms "vision and memory disorder". The scope of the claims is actually neurological disorders that effect vision and memory, not vision and memory disorders which affect neurological disorders. The scope of the claims is such that the treatment of the multitude of disorders set forth in the instant claims has no basis of treatment with the compounds of the invention without the recognition that the cause of these disorders, must be neurological (emphasis added). The terms "vision" and "memory" reference the biological system which is ultimately affected via treatment of a neurological or nerve related condition.

As such, it would have been *prima facie* obvious to use the FKBP-type immunophillin ligand compounds of '378 known to treat or affect neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder in a method of treatment for a neurological disorder, such as damaged or degenerative neurons, which effects either vision or memory. The examiner maintains the position that the scope of the instant claims drawn to treatment of nerve related conditions with the claimed compounds is encompassed by the use of the same compounds in '378 to treat or affect neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder.

35 U.S.C. 103 Rejection- Claims 1-4, 6, 8-10, 12, 14, 16, 18, 19 and 36-56

Appellant's arguments in the brief filed 4-2-02, have been fully considered but they are not persuasive. The rejection of claims 1-4,6,8-11, and 21-37 under 35 U.S.C. 103 over Hamilton et al., U.S. Patent No. 5,786,378 ('378) is maintained for the reasons set forth below.

Appellant's central argument is that a *prima facie* case of obviousness has not been established because there purportedly is no evidence of record that a compound useful for treating Alzheimer's Disease, Parkinson's disease and the other conditions cited in the references was expected to work for vision disorders or memory impairment.

Appellant presumes that the scope of the claims disregards the neurological etiology of the various conditions set forth in the instant claims, as well as that the prior art of record does not provide a showing to the treatment of neurological disorders or

neuronal activity broadly. Appellant does not dispute that the compounds of the invention have been set forth in the prior art, it is disputed that these compounds would have been useful for treating a vision disorder; moreover, it is clear that the prior art of record indeed addresses treating nerve related memory impairment and thus establishes a *prima facie* case of obviousness. Thus the question is not whether the prior art specifically states a vision disorder, but whether the claim to treatment of a nerve related vision or memory disorder with the compounds of the invention would have been obvious to one of skill in the art.

Appellant should note that the prior art need not teach each and every limitation set forth in the claim to establish a *prima facie* case of obviousness, only provide a reason or motivation to combine the prior art in a manner necessary to produce the claimed invention, the reasoning may be implicit or explicit. Obviousness does not require absolute predictability. Obviousness does, however, require some relationship between the use taught in the reference and the use discovered by the applicant, *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097, 231 USPQ 375, 379 (Fed. Cir. 1986). In *Merck* the reference compound and the claimed compound were both known, and the uses were similar; the court held that the claimed use would be expected *prima facie* in light of the known use of the reference compound. Note, the court recognized similar uses, not identical uses as supporting a *prima facie* case of obviousness.

The scope of the instant claims is such that the treatment of the multitude of vision disorders set forth has no basis of treatment with the compounds of the invention without the recognition that the cause of these disorders, must be neurological or nerve

related (emphasis added). If the vision and memory disorders were not "nerve related" as claimed, applicant's presumptions regarding no evidence towards the treatment of a visual disorder with the instant compounds would be plausible. Appellant had previously amended the claims to include the neurological basis because it was clear that there was no support in the specification for the treatment of vision and memory disorders broadly with the compounds of the invention, i.e. glaucoma, cataracts, myopia, amnesia, which are all conditions which effect vision and memory, yet the compounds of the invention had no support for these conditions or the multitude of conditions which are encompassed by the terms "vision and memory disorder". The scope of the claims is actually neurological disorders or neurodegenerative states that effect vision and memory, not vision and memory disorders which affect neurological disorders.

Appellant's arguments are based on the logic that even though the compounds of '378 are drawn to treating or effecting neuronal activity via stimulation of damaged neurons, promotion of neuronal regulation and treatment of a neurological disorder using the same FKBP-type immunophillin ligands of the instant claims, one of ordinary skill in the art presented with a neurological disorder which effects either vision or memory, would not have a reasonable expectation of success in the use of these compounds to treat a nerve related vision or memory disorder.

Hamilton et al. ('378) teaches the use of the instant compound for the treatment of neurodegeneration and conditions associated therewith. Appellant would seek to limit the teachings of Hamilton et al. to peripheral neuropathies when it is clear that peripheral neuropathies is one subset of the broad use of the compounds with regards

to nerve related diseases. Note, col. 11, line 59 – col.12, line 9, wherein it is specifically taught that "The novel compounds of the present invention...possess an excellent degree of neurotrophic activity. This activity is useful in the stimulation of damaged neurons, the promotion of neuronal regeneration, the prevention of neurodegeneration, and in the treatment of several neurological disorders known to be associated with neuronal degeneration and peripheral neuropathies. The neurological disorders that may be treated include but are not limited to myasthenia gravis....cervical spondylosis..... Gullain Barre syndrome.....Alzheimer's syndrome, and Parkinson's disease", or column 2, lines 41-44 wherein Hamilton teaches " the present invention provides non-immunosuppressive compounds containing small molecule FKBP rotamase inhibitors for enhancing neurite outgrowth, and promoting neuronal growth and regeneration in various neuropathological situations where neuronal repair can be facilitated".

Appellant has stated in the brief p.9, that "Alzheimer's Disease is not a type of memory impairment, and nothing in the cited references suggests that it is". Applicant should note that assertions do not take the place of evidence; moreover, one of the *Graham v. Deere* factors of obviousness is resolving the level of ordinary skill in the pertinent art. It has been clearly established in the art of neurological science that Alzheimer's is a type of memory impairment. The Teri et al., reference cited by applicant in the instant brief (p. 7) recognizes this fact, wherein the first line of Teri et al., clearly states that "Dementia of the Alzheimer's type is the most prevalent form of dementia". As defined by the Merck Manual, "Dementia is a chronic, slowly progressive illness

resulting in loss of memory and a severe decline in all aspects of mental functioning....dementia is usually irreversible". It is quite clear that one of skill in the art would recognize a progressive loss of memory as a memory impairment. Appellant additionally argues that the limitations of claim 6 are not addressed in the prior art of record; however, assuming *arguendo*, that the claim is limiting, this claim can only be valid as a limiting claim if applicant intends that injury occurs somewhere other than the direct ophthalmologic site, such as the brain, and indirectly effects a nerve related vision disorder. The state of the art as set forth in applicant's specification (p.2, lines 10-12) supports this indirect nerve related vision disorder as it states that "The visual system may be adversely affected by disorders correlating to physical injury to the eye, head, or other parts of the body resulting from external forces...". However the causation, it must be nerve related therefore the teachings of Hamilton et al. as cited herein still apply.

Hamilton et al. had provided additional motivation to one of skill in the art to use the compounds of the invention with disorders that are nerve related as Hamilton et al. teaches that compounds of the invention do not exert any significant immunosuppressive activity in addition to their neurotrophic activity (col. 2, lines 55 - 65). The key feature of non- immunosuppressive activity in addition to neurotrophic activity, easily provides the motivation for one of skill in the art to use the compound for the treatment of nerve related disorders in different organ systems of a mammal, such as vision or memory, as long as the disorder is combated neurologically.

Appellant has not provided a response to these specific motivations supported by the prior art of record, nor provided a showing that the critical claim language of "nerve

related" with regard to the disorders treated is outside the scope of the prior art of record.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Howard V. Owens
November 18, 2002

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